WHAT IS CLAIMED IS:

1. A method for identifying pharmaceutically relevant substances having activity in the following indications or effective for the treatment of visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, schizophrenia, manias, depression, stroke, cerebral trauma, paraplegia, amyotrophic lateral sclerosis, neuralgia, weight regulation, obesity, anorexia nervosa, epilepsy, hemiballism, Huntington's chorea, stress, Parkinson's disease, TIA (transient ischaemic attacks), emesis, dizziness, cataracts, arthritis, hyperactivity, developmental disorders, rabies, viral infections, bacterial infections, influenza, malaria, Creutzfeldt-Jacob disease, inflammatory bowel disease, Crohn's disease, cardiovascular and cardiorespiratory functional disorders, hypertonia, disorders of baroafference or chemoafference, toxoplasmosis, asthma, autoimmunity in the central and peripheral nervous system, diabetic neuropathy, autoimmune diabetes, alcoholic neuropathy, HIV-neuroAIDS; disorders of the autonomous nervous system, disorders of the nervous system of the digestive tract, oversensitivity, neurodegeneration, Alzheimer's disease, ischaemia; encephalitis; prion disease, Rasmussen's encephalitis, HIV encephalitis, demyelinisation, retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the cerebellum, cerebellar ataxia, diseases of the basal ganglia, diseases of the pallidum, diseases of the organ of hearing or balance, diseases of the auditory canal or vestibular canal, memory disorders, learning disorders, cognitive disorders, stiff man syndrome, restless leg syndrome, anxiety, phobias, sleep disorders; drug dependency, addiction or withdrawal; hepatoencephalopathy with alcohol intoxication, hepatoencephalopathy without alcohol intoxication, diseases of neurotoxicological origin, diseases of the spinal motor neuron, muscular atrophies, muscular dystrophies, diseases of the posterior funiculus,

alcoholic neuropathies, neuroinflammation, disturbances in the state of mind in the case of infections or fever, stress, taste disorders, food allergies, Chinese restaurant syndrome, aggression, paranoia, brain concussion, neuroendocrine disorders, Tourrette's syndrome, cerebrovascular spasms, neuronal apoptosis, neurodegeneration, neuronal necrosis, astrocytosis, burn-out syndrome, sudden infant death, heart attack, insomnia, retrograde amnesia, multiple sclerosis, jet lag, disorders of sexual function, or having activity for promoting microglia activation, learning, cognition or memory, for neuroprotection, for the liquor diagnosis of neurostatic diseases or for adjuvant therapy by electrostimulation of the nucleus subthalamicus in Parkinson's disease,

said method comprising the steps of:

(a) incubating a test substance

with at least one biomolecule selected from group I, wherein group I consists of:

the protein BNPI or DNPI or a protein comprising SEQ ID NO: 2, 4, 6, 8, 10, 12 or 14 or a protein which is at least 90% homologous thereto or a protein encoded by a polynucleotide comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13 or a polynucleotide which is at least 90% homologous thereto, or a protein encoded by a nucleic acid which binds under stringent conditions to a polynucleotide comprising SEQ ID NO: 1, 3, 5, 7, 9 or 11 or an antisense polynucleotide thereof, or a partial protein of one of the above-mentioned proteins which is at least 10 amino acids long, or

with a cell or a preparation from a cell which has synthesized at least one of the above-mentioned biomolecules of group I, and

(b) measuring the binding of the test substance to the biomolecule of group I or a cell or preparation of a cell which has synthesized at least one of the above-mentioned biomolecules of group I via a change in a known labelled ligand

of (i) the biomolecule contained in at least one cell membrane or (ii) the partial protein or protein or via the activity of a labelled test substance bonded thereto, or

measuring at least one functional parameter changed by the binding of the test substance to the biomolecule of group I or a cell or a preparation of a cell which has synthesized at least one of the above-mentioned biomolecules of group I.

2. The method of claim 1, wherein said biomolecule is a partial protein of one of the above-mentioned proteins which is at least 20 amino acids long.

3. The method of claim 1, wherein the cell is manipulated by genetic engineering before step (a).

4. The method of claim 3, wherein the cell manipulation by genetic engineering allows the measurement of at least one functional parameter modified by the binding of the test substance.

5. The method of claim 4, wherein the manipulation by genetic engineering causes expression of a form of a G-protein which is not expressed endogenously in the cell or introduction of a reporter gene.

6. The method of claim 3, wherein the cell is manipulated by genetic engineering so that the cell contains at least one polynucleotide selected from the group consisting of SEQ ID NOS 1, 3, 5, 7, 9, 11 and 13, or a polynucleotide

which is at least 90% homologous thereto.

7. The method of claim 6, wherein the polynucleotide is contained in a recombinant DNA construct.

8. The method of claim 3, wherein, after the manipulation by genetic engineering according to claim 3 and before step (a), the cell is cultivated under conditions which allow expression.

9. The method of claim 8, wherein the cell is cultured under selection pressure.

10. The method of claim 1, wherein the cell is an amphibian cell, bacterial cell, yeast cell, insect cell or an immortalized or native mammalian cell.

11. The method of claim 1, wherein the measurement of at least one of the functional parameters modified by the test substance is carried out via measurement of the regulation, inhibition or activation of receptors, ion channels or enzymes.

12. The method of claim 1, wherein the measurement of at least one of the functional parameters modified by the test substance is carried out via measurement of the modification of the gene expression, the ionic environment, the pH, the membrane potential, the enzyme activity or the concentration of the second messenger.

13. The method of claim 1, wherein a first method according to claim 1 is coupled with a second method according to claim 1 such that the measurement values and results of the first method with regard to the substance to be measured are compared with the measurement values and results of the second method with regard to the substance to be measured, wherein one of the two methods is the main method, wherein, in step (a) of said main method, the test substance is incubated with either

a biomolecule selected from group II, wherein group II consists of the protein BNPI or a protein comprising SEQ ID NO: 2, 4, 6 or 8 or a protein which is at least 90% homologous thereto or a protein encoded by a polynucleotide comprising SEQ ID NO: 1, 3, 5 or 7 or by a polynucleotide which is at least 90% homologous thereto, or a protein encoded by a nucleic acid which binds under stringent conditions to a polynucleotide comprising SEQ ID NO: 1, 3, 4, or 7 or the polynucleotides thereof, or a partial protein of one of the above-mentioned proteins which is at least 10 amino acids long,

or a cell or a preparation from a cell that has synthesized at least one of the above-mentioned proteins or partial proteins, or biomolecules of group II,

or a biomolecule selected from group III, wherein group III consists of the protein DNPI or a protein comprising SEQ ID NO: 10, 12 or 14 or a protein which is at least 90% homologous thereto or a protein encoded by a polynucleotide comprising SEQ ID NO: 9, 11 or 13 or by a polynucleotide which is at least 90% homologous thereto, or a protein encoded by a nucleic acid which binds under stringent conditions to a polynucleotide comprising SEQ ID NO: 9, 11 or 13 or an antisense polynucleotide thereof, or a partial protein of one of the above-mentioned proteins which is at least 10 amino acids long,

or a cell or a preparation from a cell that has synthesized at least one of

the above-mentioned proteins or partial proteins, or biomolecules of group III,

and

wherein, in a secondary method, in step (a) the test substance is incubated with a biomolecule from group I or with a biomolecule selected from group II or group III wherein the biomolecule selected from group II or group III is selected from a group which differs from the group the biomolecule with which the test substance is incubated in the main method.

14. The method of claim 13 wherein the partial protein of group II or the partial protein of group III has a length of at least 20 amino acids.

15. The method of claim 1, wherein the substances to be identified are selected from the group of substances having activity in the following indications or effective for the treatment of

visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, amyotrophic lateral sclerosis, neuralgia, weight regulation, obesity, Parkinson's disease, cataracts, viral infections or bacterial infections, diabetic neuropathy, autoimmune diabetes, alcoholic neuropathy, HIV-neuroAIDS; retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the organ of hearing or balance, diseases of the auditory canal or vestibular canal, sleep disorders, drug dependency, addiction or withdrawal; neuroinflammation, insomnia, for adjuvant therapy by electrostimulation of the nucleus subthalamicus in Parkinson's disease; or substances for the treatment of diseases of the spinal motor neuron, muscular atrophies or muscular dystrophies.

16. The method of claim 1, wherein the substances to be identified are selected from the group of substances having activity in the following indications or effective for the treatment of

visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, amyotrophic lateral sclerosis, weight regulation, obesity, cataracts, viral infections or bacterial infections, retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the organ of hearing or balance, diseases of the auditory canal or vestibular canal, drug dependency, addiction or withdrawal; neuroinflammation; or substances for the treatment of diseases of the spinal motor neuron, muscular atrophies or muscular dystrophies.

17. The method of claim 1, wherein the substances to be identified are selected from the group of substances having activity in the following indications or effective for the treatment of

visual disturbances, retinitis pigmentosa, optical degeneration, cataracts, detachment of the retina, retinal degeneration, glaucoma or nystagmus; or

hearing disorders, tinnitus, Menière's disease, hearing loss, diseases of the organ of hearing or balance or diseases of the auditory canal or vestibular canal; or

substances for the treatment of diseases of the spinal motor neuron, muscular atrophies or muscular dystrophies.

18. A compound identifiable, by the method of claim 1, as a pharmaceutically relevant substance having activity in at least one of the

indications according to claim 1.

19. A compound according to claim 18, wherein said compound is a low molecular weight compound.

20. A method of treating a mammal suffering from visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, schizophrenia, manias, depression, stroke, cerebral trauma, paraplegia, amyotrophic lateral sclerosis, neuralgia, weight regulation, obesity, anorexia nervosa, epilepsy, hemiballism, Huntington's chorea, stress, Parkinson's disease, TIA (transient ischaemic attacks), emesis, dizziness, cataracts, arthritis, hyperactivity, developmental disorders, rabies, viral infections or bacterial infections, influenza, malaria, Creutzfeldt-Jacob disease, inflammatory bowel disease, Crohn's disease, cardiovascular and cardiorespiratory functional disorders, hypertonia, disorders of baroafference or chemoafference, toxoplasmosis, asthma, autoimmunity in the central and peripheral nervous system, diabetic neuropathy, autoimmune diabetes, alcoholic neuropathy, HIV-neuroAIDS; disorders of the autonomous nervous system, disorders of the nervous system of the digestive tract, oversensitivity, neurodegeneration, Alzheimer's disease, ischaemia; encephalitis; prion disease, Rasmussen's encephalitis, HIV encephalitis, demyelinisation, retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the cerebellum, cerebellar ataxia, diseases of the basal ganglia, diseases of the pallidum, diseases of the organ of hearing or balance, diseases of the auditory canal or vestibular canal, memory disorders, learning disorders, cognitive disorders, stiff man syndrome, restless leg syndrome, anxiety, phobias, sleep disorders; drug dependency, addiction or withdrawal; hepatoencephalopathy

with alcohol intoxication, hepatoencephalopathy without alcohol intoxication, diseases of neurotoxicological origin, diseases of the spinal motor neuron, muscular atrophies, muscular dystrophies, diseases of the posterior funiculus, alcoholic neuropathies, neuroinflammation, disturbances in the state of mind in the case of infections or fever, stress, taste disorders, food allergies, Chinese restaurant syndrome, aggression, paranoia, brain concussion, neuroendocrine disorders, Tourrette's syndrome, cerebrovascular spasms, neuronal apoptosis, neurodegeneration, neuronal necrosis, astrocytosis, burn-out syndrome, sudden infant death, heart attack, insomnia, retrograde amnesia, multiple sclerosis, jet lag, disorders of sexual function, or having activity for promoting microglia activation, learning, cognition or memory, for neuroprotection, for the liquor diagnosis of neurostatic diseases or for adjuvant therapy by electrostimulation of the nucleus subthalamicus in Parkinson's disease, comprising administering to said mammal a therapeutically effective amount of:

a. a polynucleotide which codes for BNPI or DNPI or a polynucleotide which is at least 90% homologous to one of the nucleotide sequences comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13,

b. a polynucleotide of a ribozyme or other DNA enzyme or of a catalytic RNA or DNA which contains a nucleotide sequence which is capable of binding specifically to one of the polynucleotides listed under point a),

c. a vector containing a polynucleotide according to one of points a) or b),

d. BNPI or DNPI or a protein comprising SEQ ID NO: 2, 4, 6, 8, 10, 12 or 14 or a protein which is at least 90% homologous thereto, or a protein encoded by a polynucleotide comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13 or a polynucleotide which is at least 90% homologous thereto, or a protein encoded by a nucleic acid which binds under stringent conditions to a polynucleotide

comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13 or an antisense polynucleotide thereof, or a partial protein of one of the above-mentioned proteins which is at least 10 amino acids long,

e. an antibody against one of the proteins or partial proteins according to point d),

f. a cell containing a polynucleotide according to one of points a) or b), a vector according to point c), a protein or partial protein according to point d) or an antibody according to point e),

g. a compound according to claim 18, or

h. an active substance which binds to a protein or partial protein according to point d), and

a pharmaceutically acceptable carrier or auxiliary substance.

21. The method of claim 20, wherein said polynucleotide according to point a) is a DNA or RNA.

22. The method of claim 20, wherein said polynucleotide according to point b) is an antisense polynucleotide, a peptide nucleic acid, a DNA enzyme or a ribozyme.

23. The method of claim 20, wherein said vector according to point c) is an expression vector, a vector derived from a virus or a vector containing at least one LTR, poly A, promoter or ORI sequence.

24. The method of claim 20, wherein said vector according to point c) is

an adenovirus, adeno-associated virus or herpes virus.

25. The method of claim 20, wherein said protein or partial protein according to point d) has been post-translationally modified.

26. The method of claim 25, wherein said protein or partial protein according to point d) has been glycosylated, phosphorylated, amidated, methylated, acetylated, ADP-ribosylated, hydroxylated, provided with a membrane anchor, cleaved or shortened.

27. The method of claim 20, wherein said antibody according to point e) is a monoclonal or polyclonal antibody.

28. The method of claim 20, wherein said cell according to point f) is an amphibian cell, bacterial cell, yeast cell, insect cell or an immortalized or native mammalian cell.

29. The method of claim 20, wherein said active substance according to point h) is a low molecular weight active substance.

30. A method of providing gene therapy to a mammal, said method comprising administering to said mammal a therapeutic amount of:

a. a polynucleotide which codes for BNPI or DNPI or a polynucleotide which is at least 90% homologous to a nucleotide sequence comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13,

b. a polynucleotide of a ribozyme or other DNA enzyme or of a catalytic RNA or DNA which contains a nucleotide sequence which is capable of binding specifically to one of the polynucleotides listed under point a),

c. a vector containing a polynucleotide according to one of points a) or b),

f. a cell containing a polynucleotide according to one of points a) or b) or a vector according to point c).

31. The method of claim 30, wherein the gene therapy is *in vivo* gene therapy.

32. The method of claim 30, wherein the gene therapy is *in vitro* gene therapy.

33. The method of claim 30, wherein said polynucleotide according to point a) is a DNA or RNA.

34. The method of claim 30, wherein said polynucleotide according to point b) is an antisense polynucleotide, a peptide nucleic acid, a DNA enzyme or a ribozyme.

35. The method of claim 30, wherein said vector according to point c) is an expression vector, a vector derived from a virus or a vector containing at least one LTR, poly A, promoter or ORI sequence.

36. The method of claim 30, wherein said vector according to point c) is an adenovirus, adeno-associated virus or herpes virus.

37. The method of claim 30, wherein said cell according to point f) is an amphibian cell, bacterial cell, yeast cell, insect cell or an immortalized or native mammalian cell.

38. The method of claim 30, wherein said gene therapy has activity in the following indications or is effective for the treatment of

visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, schizophrenia, manias, depression, stroke, cerebral trauma, paraplegia, amyotrophic lateral sclerosis, neuralgia, weight regulation, obesity, anorexia nervosa, epilepsy, hemiballism, Huntington's chorea, stress, Parkinson's disease, TIA (transient ischaemic attacks), emesis, dizziness, cataracts, arthritis, hyperactivity, developmental disorders, rabies, viral infections, bacterial infections, influenza, malaria, Creutzfeldt-Jacob disease, inflammatory bowel disease, Crohn's disease, cardiovascular and cardiorespiratory functional disorders, hypertonia, disorders of baroafference or chemoafference, toxoplasmosis, asthma, autoimmunity in the central and peripheral nervous system, diabetic neuropathy, autoimmune diabetes, alcoholic neuropathy, HIV-neuroAIDS; disorders of the autonomous nervous system, disorders of the nervous system of the digestive tract, oversensitivity, neurodegeneration, Alzheimer's disease, ischaemia; encephalitis; prion disease, Rasmussen's encephalitis, HIV encephalitis, demyelinisation, retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the cerebellum, cerebellar ataxia, diseases of the basal ganglia, diseases of the pallidum, diseases of the organ of hearing or balance, diseases of the auditory

canal or vestibular canal, memory disorders, learning disorders, cognitive disorders, stiff man syndrome, restless leg syndrome, anxiety, phobias, sleep disorders; drug dependency, addiction or withdrawal; hepatoencephalopathy with alcohol intoxication, hepatoencephalopathy without alcohol intoxication, diseases of neurotoxicological origin, diseases of the spinal motor neuron, muscular atrophies, muscular dystrophies, diseases of the posterior funiculus, alcoholic neuropathies, neuroinflammation, disturbances in the state of mind in the case of infections or fever, stress, taste disorders, food allergies, Chinese restaurant syndrome, aggression, paranoia, brain concussion, neuroendocrine disorders, Tourrette's syndrome, cerebrovascular spasms, neuronal apoptosis, neurodegeneration, neuronal necrosis, astrocytosis, burn-out syndrome, sudden infant death, heart attack, insomnia, retrograde amnesia, multiple sclerosis, jet lag, disorders of sexual function, or having activity for promoting microglia activation, learning, cognition or memory, for neuroprotection, for the liquor diagnosis of neurostatic diseases or for adjuvant therapy by electrostimulation of the nucleus subthalamicus in Parkinson's disease.

39. A method of diagnosing a condition selected from:

visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, schizophrenia, manias, depression, stroke, cerebral trauma, paraplegia, amyotrophic lateral sclerosis, neuralgia, weight regulation, obesity, anorexia nervosa, epilepsy, hemiballism, Huntington's chorea, stress, Parkinson's disease, TIA (transient ischaemic attacks), emesis, dizziness, cataracts, arthritis, hyperactivity, developmental disorders, rabies, viral infections, bacterial infections, influenza, malaria, Creutzfeldt-Jacob disease, inflammatory bowel disease, Crohn's disease, cardiovascular and cardiorespiratory functional disorders, hypertonia, disorders of baroafference or chemoafference, toxoplasmosis, asthma, autoimmunity in the

central and peripheral nervous system, diabetic neuropathy, autoimmune diabetes, alcoholic neuropathy, HIV-neuroAIDS; disorders of the autonomous nervous system, disorders of the nervous system of the digestive tract, oversensitivity, neurodegeneration, Alzheimer's disease, ischaemia; encephalitis; prion disease, Rasmussen's encephalitis, HIV encephalitis, demyelinisation, retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the cerebellum, cerebellar ataxia, diseases of the basal ganglia, diseases of the pallidum, diseases of the organ of hearing or balance, diseases of the auditory canal or vestibular canal, memory disorders, learning disorders, cognitive disorders, stiff man syndrome, restless leg syndrome, anxiety, phobias, sleep disorders; drug dependency, addiction or withdrawal; hepatoencephalopathy with alcohol intoxication, hepatoencephalopathy without alcohol intoxication, diseases of neurotoxicological origin, diseases of the spinal motor neuron, muscular atrophies, muscular dystrophies, diseases of the posterior funiculus, alcoholic neuropathies, neuroinflammation, disturbances in the state of mind in the case of infections or fever, stress, taste disorders, food allergies, Chinese restaurant syndrome, aggression, paranoia, brain concussion, neuroendocrine disorders, Tourrette's syndrome, cerebrovascular spasms, neuronal apoptosis, neurodegeneration, neuronal necrosis, astrocytosis, burn-out syndrome, sudden infant death, heart attack, insomnia, retrograde amnesia, multiple sclerosis, jet lag, disorders of sexual function, comprising administering an effective amount of a diagnostic agent comprising:

a. a polynucleotide which codes for BNPI or DNPI or a polynucleotide which is at least 90% homologous to one of the nucleotide sequences comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13,

b. a polynucleotide of a ribozyme or other DNA enzyme or of a catalytic RNA or DNA which contains a nucleotide sequence which is capable of binding specifically to one of the polynucleotides listed under point a),

c. a vector containing a polynucleotide according to one of points a) or b),

d. BNPI or DNPI or a protein comprising SEQ ID NO: 2, 4, 6, 8, 10, 12 or 14 or a protein which is at least 90% homologous thereto, or a protein encoded by a polynucleotide comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13 or a polynucleotide which is at least 90% homologous thereto, or a protein encoded by a nucleic acid which binds under stringent conditions to a polynucleotide comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13 or an antisense polynucleotide thereof, or a partial protein of one of the above-mentioned proteins which is at least 10 amino acids long,

e. an antibody against one of the proteins or partial proteins according to point d),

f. a cell containing a polynucleotide according to one of points a) or b), a vector according to point c), a protein or partial protein according to point d) or an antibody according to point e),

g. a compound according to claim 18, or

h. an active substance which binds to a protein or partial protein according to point d).

40. The method of claim 39, wherein said polynucleotide according to point a) is a DNA or RNA.

41. The method of claim 39, wherein said polynucleotide according to point b) is an antisense polynucleotide, a peptide nucleic acid, a DNA enzyme or a ribozyme.

42. The method of claim 39, wherein said vector according to point c) is an expression vector, a vector derived from a virus or a vector containing at least one LTR, poly A, promoter or ORI sequence.

43. The method of claim 39, wherein said vector according to point c) is an adenovirus, adeno-associated virus or herpes virus.

44. The method of claim 39, wherein said protein or partial protein according to point d) has been post-translationally modified.

45. The method of claim 44, wherein said protein or partial protein according to point d) has been glycosylated, phosphorylated, amidated, methylated, acetylated, ADP-ribosylated, hydroxylated, provided with a membrane anchor, cleaved or shortened.

46. The method of claim 39, wherein said antibody according to point e) is a monoclonal or polyclonal antibody.

47. The method of claim 39, wherein said cell according to point f) is an amphibian cell, bacterial cell, yeast cell, insect cell or an immortalized or native mammalian cell.

48. The method of claim 39, wherein said active substance according to point h) is a low molecular weight active substance.

49. A method of screening for pharmaceutically relevant substances, said substances having activity in the following indications, or being effective for the treatment of:

visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, schizophrenia, manias, depression, stroke, cerebral trauma, paraplegia, amyotrophic lateral sclerosis, neuralgia, weight regulation, obesity, anorexia nervosa, epilepsy, hemiballism, Huntington's chorea, stress, Parkinson's disease, TIA (transient ischaemic attacks), emesis, dizziness, cataracts, arthritis, hyperactivity, developmental disorders, rabies, viral infections, bacterial infections, influenza, malaria, Creutzfeldt-Jacob disease, inflammatory bowel disease, Crohn's disease, cardiovascular and cardiorespiratory functional disorders, hypertonia, disorders of baroafference or chemoafference, toxoplasmosis, asthma, autoimmunity in the central and peripheral nervous system, diabetic neuropathy, autoimmune diabetes, alcoholic neuropathy, HIV-neuroAIDS; disorders of the autonomous nervous system, disorders of the nervous system of the digestive tract, oversensitivity, neurodegeneration, Alzheimer's disease, ischaemia; encephalitis; prion disease, Rasmussen's encephalitis, HIV encephalitis, demyelinisation, retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the cerebellum, cerebellar ataxia, diseases of the basal ganglia, diseases of the pallidum, diseases of the organ of hearing or balance, diseases of the auditory canal or vestibular canal, memory disorders, learning disorders, cognitive disorders, stiff man syndrome, restless leg syndrome, anxiety, phobias, sleep disorders; drug dependency, addiction or withdrawal; hepatoencephalopathy with alcohol intoxication, hepatoencephalopathy without alcohol intoxication, diseases of neurotoxicological origin, diseases of the spinal motor neuron, muscular atrophies, muscular dystrophies, diseases of the posterior funiculus,

alcoholic neuropathies, neuroinflammation, disturbances in the state of mind in the case of infections or fever, stress, taste disorders, food allergies, Chinese restaurant syndrome, aggression, paranoia, brain concussion, neuroendocrine disorders, Tourrette's syndrome, cerebrovascular spasms, neuronal apoptosis, neurodegeneration, neuronal necrosis, astrocytosis, burn-out syndrome, sudden infant death, heart attack, insomnia, retrograde amnesia, multiple sclerosis, jet lag, disorders of sexual function, or having activity for promoting microglia activation, learning, cognition or memory, for neuroprotection, for the liquor diagnosis of neurostatic diseases or for adjuvant therapy by electrostimulation of the nucleus subthalamicus in Parkinson's disease.

said method comprising the steps of:

(a) incubating a test substance with at least one biomolecule selected from group I, wherein group I consists of:

a. a polynucleotide which codes for BNPI or DNPI or a polynucleotide which is at least 90% homologous to one of the nucleotide sequences comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13,

b. a polynucleotide of a ribozyme or other DNA enzyme or of a catalytic RNA or DNA which contains a nucleotide sequence which is capable of binding specifically to one of the polynucleotides listed under point a),

c. a vector containing a polynucleotide according to one of points a) or b),

d. BNPI or DNPI or a protein comprising SEQ ID NO: 2, 4, 6, 8, 10, 12 or 14 or a protein which is at least 90% homologous thereto, or a protein encoded by a polynucleotide comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13 or a polynucleotide which is at least 90% homologous thereto, or a protein encoded by a nucleic acid which binds under stringent conditions

to a polynucleotide comprising SEQ ID NO: 1, 3, 5, 7, 9, 11 or 13 or an antisense polynucleotide thereof, or a partial protein of one of the above-mentioned proteins which is at least 10 amino acids long,

e. an antibody against one of the proteins or partial proteins according to point d), or

a cell or a preparation of a cell containing a polynucleotide according to one of points a) or b), a vector according to point c), a protein or partial protein according to point d) or an antibody according to point e), and

(b) measuring the binding of the test substance to the biomolecule of group I, or cell or preparation of a cell containing a polynucleotide according to one of points a) or b), a vector according to point c), a protein or partial protein according to point d) or an antibody according to point e), via a change in a known labelled ligand of (i) the biomolecule contained in at least one cell membrane or (ii) the partial protein or protein or via the activity of a labelled test substance bonded thereto, or

measuring at least one functional parameter changed by the binding of the test substance to the biomolecule of group I or cell or preparation of a cell containing a polynucleotide according to one of points a) or b), a vector according to point c), a protein or partial protein according to point d) or an antibody according to point e).

50. The method of claim 49, wherein said polynucleotide according to point a) is a DNA or RNA.

51. The method of claim 49, wherein said polynucleotide according to point b) is an antisense polynucleotide, a peptide nucleic acid, a DNA enzyme or

a ribozyme.

52. The method of claim 49, wherein said vector according to point c) is an expression vector, a vector derived from a virus or a vector containing at least one LTR, poly A, promoter or ORI sequence.

53. The method of claim 49, wherein said vector according to point c) is an adenovirus, adeno-associated virus or herpes virus.

54. The method of claim 49, wherein said protein or partial protein according to point d) has been post-translationally modified.

55. The method of claim 54, wherein said protein or partial protein according to point d) has been glycosylated, phosphorylated, amidated, methylated, acetylated, ADP-ribosylated, hydroxylated, provided with a membrane anchor, cleaved or shortened.

56. The method of claim 49, wherein said antibody according to point e) is a monoclonal or polyclonal antibody.

57. The method of claim 49, wherein said a cell or a preparation of a cell containing a polynucleotide according to one of points a) or b), a vector according to point c), a protein or partial protein according to point d) or an antibody according to point e), is an amphibian cell, bacterial cell, yeast cell, insect cell or an immortalized or native mammalian cell or is a preparation from one of the

foregoing cell types.

58. The method of claim 49, wherein said substances have activity in the following indications, or are effective for the treatment of:

visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, amyotrophic lateral sclerosis, neuralgia, weight regulation, obesity, Parkinson's disease, cataracts, viral infections or bacterial infections, diabetic neuropathy, autoimmune diabetes, alcoholic neuropathy, HIV-neuroAIDS; retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the organ of hearing and/or balance, diseases of the auditory canal or vestibular canal, sleep disorders, drug dependency, addiction and withdrawal, especially in the case of alcohol, nicotine, opiates, Ecstasy or cocaine; neuroinflammation, insomnia, for adjuvant therapy by electrostimulation of the nucleus subthalamicus in Parkinson's disease; or diseases of the spinal motor neuron, muscular atrophies or muscular dystrophies.

59. The method of claim 49, wherein said substances have activity in the following indications, or are effective for the treatment of:

visual disturbances, retinitis pigmentosa, optical degeneration, hearing disorders, tinnitus, Menière's disease, hearing loss, amyotrophic lateral sclerosis, weight regulation, obesity, cataracts, viral infections or bacterial infections, retinal degeneration, glaucoma, nystagmus, detachment of the retina, diseases of the organ of hearing and/or balance, diseases of the auditory canal or vestibular canal, drug dependency, addiction and withdrawal, especially in the case of alcohol, nicotine, opiates, Ecstasy or cocaine; neuroinflammation; or diseases of the spinal motor neuron, muscular atrophies or muscular dystrophies.

60. The method of claim 49, wherein said substances have activity in the following indications, or are effective for the treatment of:

visual disturbances, retinitis pigmentosa, optical degeneration, cataracts, detachment of the retina, retinal degeneration, glaucoma or nystagmus; or

hearing disorders, tinnitus, Menière's disease, hearing loss, diseases of the organ of hearing or balance, or diseases of the auditory canal or vestibular canal; or

diseases of the spinal motor neuron, muscular atrophies or muscular dystrophies.

61. The method of claim 49, wherein said emesis is hyperemesis, said oversensitivity is glutamate-mediated sensitivity, said neurodegeneration is related to Alzheimer's disease, said encephalitis is viral or bacterial encephalitis, said demyelinisation is related to multiple sclerosis, said drug dependency, addiction or withdrawal is related to alcohol, nicotine, opiates, Ecstasy or cocaine, or said disorder of sexual function is impotence or priapism.

62. The method of claim 1, wherein said emesis is hyperemesis, said oversensitivity is glutamate-mediated sensitivity, said neurodegeneration is related to Alzheimer's disease, said encephalitis is viral or bacterial encephalitis, said demyelinisation is related to multiple sclerosis, said drug dependency, addiction or withdrawal is related to alcohol, nicotine, opiates, Ecstasy or cocaine, or said disorder of sexual function is impotence or priapism.

63. The method of claim 20, wherein said emesis is hyperemesis, said oversensitivity is glutamate-mediated sensitivity, said neurodegeneration is related to Alzheimer's disease, said encephalitis is viral or bacterial encephalitis, said demyelinisation is related to multiple sclerosis, said drug dependency, addiction or withdrawal is related to alcohol, nicotine, opiates, Ecstasy or cocaine, or said disorder of sexual function is impotence or priapism.

64. The method of claim 38, wherein said emesis is hyperemesis, said oversensitivity is glutamate-mediated sensitivity, said neurodegeneration is related to Alzheimer's disease, said encephalitis is viral or bacterial encephalitis, said demyelinisation is related to multiple sclerosis, said drug dependency, addiction or withdrawal is related to alcohol, nicotine, opiates, Ecstasy or cocaine, or said disorder of sexual function is impotence or priapism.

65. The method of claim 39, wherein said emesis is hyperemesis, said oversensitivity is glutamate-mediated sensitivity, said neurodegeneration is related to Alzheimer's disease, said encephalitis is viral or bacterial encephalitis, said demyelinisation is related to multiple sclerosis, said drug dependency, addiction or withdrawal is related to alcohol, nicotine, opiates, Ecstasy or cocaine, or said disorder of sexual function is impotence or priapism.